Express Mail No. EL 979849042 US
Date of Deposit: October 27, 2003

REMARKS/ARGUMENTS

Reconsideration of this application in view of the foregoing amendments and the following remarks is respectfully solicited.

Claims 1-10, 12-17 remain in this application. Claim 11 has been rewritten in independent form as claim 17. Claims 4-10, 13-14 are non-elected, and no generic claim has been allowed. Claims 2 and 3 have been amended. Claims 15 and 16 are new, and claim 17 is claim 11 rewritten in independent form. Claim 11 was indicated to be allowable if placed in independent form. Accordingly, it is believed that claim 17 is allowable.

The rejection of claim 2 and 3 as being indefinite (35 U.S.C. 112) is respectfully traversed. As amended the present claims 2 and 3 are believed to be definite. The recital of a second point ("30") has been removed from claim 2 so it is clear that the range starts from about a single point and includes the previously recited second point as well as many others above and below 30 pores per inch. Present amended claim 2 includes all of the subject matter covered by original claim 2. The description of materials that appears in the last paragraph on page 15 has been incorporated into claim 3. Present amended claim 3 includes all of the subject matter covered by original claim 3.

The rejection of claims 1-3, 6 and 12 as being anticipated by Japanese publication 63-2873 is respectfully traversed. This publication does not disclose interconnected porosity. Mere porosity is not at all the same thing as interconnected porosity. This Japanese publication discusses a ceramic foam heat shield. Ceramic foam heat shields do not necessarily have interconnected porosity. Interconnected porosity is not a requirement for performing the function of shielding against heat. The heat transfer mechanism is different between closed and open celled porous structures. In open celled heat shield structures a portion of the heat is transferred by convection due to the flow of fluid through the structure.

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There is no such convection in closed cell structures. Transpiration cooling also requires open celled porosity of a particular nature, and involves different cooling mechanisms. Since the nature of open celled porosity has a fundamental impact on the nature of the heat transfer, one skilled in the art would expect to be informed by this publication if such heat transfer were intended in the disclosed heat shield. One skilled in the art would not expect interconnected porosity to be inherent in the heat shield materials described in this publication.

A person, fluent in the Japanese language, read this publication. The legends on the drawing page were translated and a copy of that translation is enclosed. Also, the description of the drawings in the specification was abstracted and appears on the enclosed page. There is nothing associated with the legends on the drawings to suggest interconnected porosity in either the coating or the core. The specification of this publication was reviewed to determine whether it describes either a coating or a core in which the pores are interconnected. No such description was found.

Many materials, including some sprayed coatings, are less than fully dense, indicating that there is some void volume or porosity within them. This void volume does not, however, permit fluids to flow through the material because the porosity is not interconnected. Neither interconnected porosity nor interconnected porosity throughout is inherent in every material that exhibits porosity. Even where there is some interconnected porosity within a material, this does not mean that a fluid will flow all the way through and out of the material. The interconnectivity must extend entirely across the material for this to occur.

Even if there is some accidental interconnected porosity in a material, and it extends entirely across the material, that accidental interconnected porosity is generally not substantially uniform. A deliberate effort is required to make a porous material that is uniform enough in its pore size characteristics to use for transpiration cooling.

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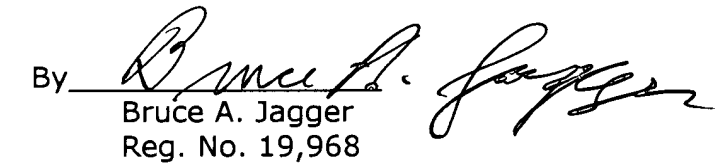
Those skilled in the art would have no reason to expect that either the porous coatings or cores of the heat shields discussed in this Japanese publication would inherently exhibit interconnected porosity. If the material of this publication did accidentally exhibit some interconnected porosity, those skilled in the art would have no reason to expect it to be substantially uniform, or suitable for use in transpiration cooling. There is nothing of record to lead one skilled in the art to assume that any of interconnected porosity, substantially uniform interconnected porosity, or suitability for use in transpiration cooling are inherent in this Japanese publication.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BRUNTON & JAGGER

By 

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